

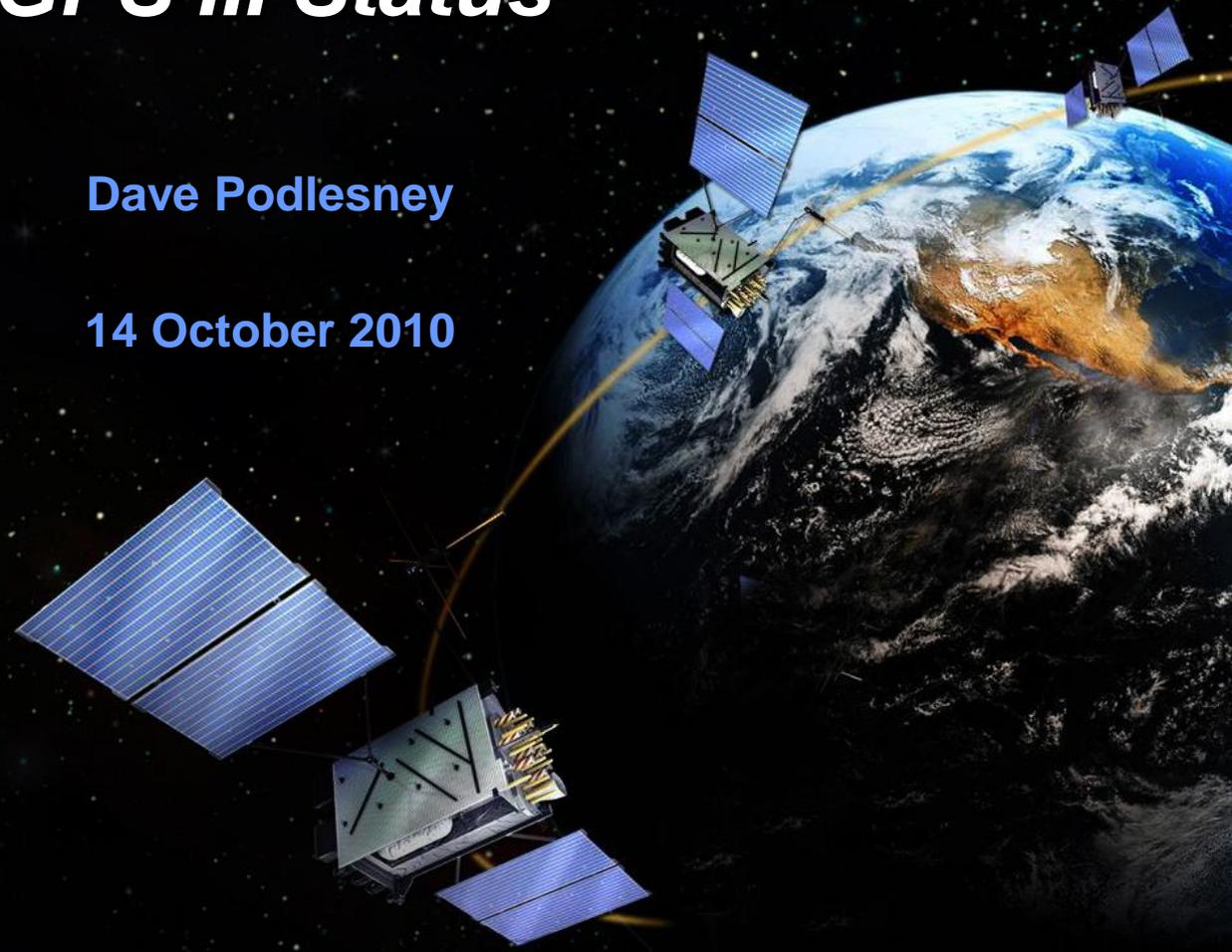


Positioning the World for Tomorrow

GPS III Status

Dave Podlesney

14 October 2010



GPS III Overview



- **GPS III Program on contract**
 - Development of 2 GPS IIIA flight vehicles
 - Ground pathfinder & simulators
 - Capability Insertion Program for IIIB & IIIC
- **Air Force “Back to Basics” acquisition**
 - Rigorous systems engineering
 - Reinvigorated specs & standards
 - Low risk capability insertion
- **Production options start Dec 2010**
 - 2 long-lead options for 2 SVs each
 - Options for 10 production vehicles starting Dec 2011

Back to Basic Fundamentals

Engineering Fundamentals

- Adherence to System Engineering Processes
 - OPSCON, Architecture and Requirements
- Strong Systems Engineering Process, Discipline and Tools
 - DOORS[®], System Architect, Mission Thread approach
- Comprehensive Mission Assurance Standards
 - Return to MIL-STD and TORs

Production Fundamentals

- “Flight-Like” Engineering Development Units (EDU)
- GPS III Non-Flight Satellite Testbed (GNST) Pathfinder
 - Space Vehicle level design validation
 - Early verification of Ground, Support and Test Equipment
 - Early validation and rehearsal of transportation operations

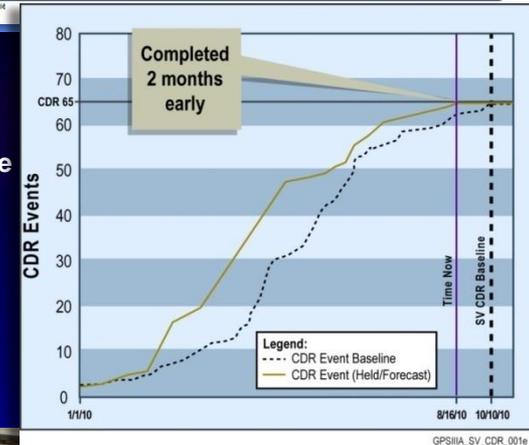
Program Management Fundamentals

- Transparency and Partnerships
 - GPS Collaboration Environment (GCE)
- Detailed Business Rhythm including GPSW and Subcontractors
- Well Established Earned Value Management Process
- Strong Risk and Opportunity Management (ROM) Process

Back to Basic Fundamentals, Driving Program Success

GPS IIIA Space Vehicle CDR 16-19 Aug 2010

Space Vehicle CDR 16-19 Aug

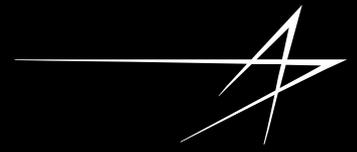


GPS III Team



Solid, Experienced Team Executing GPS III in Partnership with GPSW

New GPS IIIA Mission Capabilities



- **Improved Anti-jam**
 - Increased Military signal Power by 3-6 X
- **Improved Accuracy**
- **New L1C Signal**
 - Galileo compatible signal (L1C)
 - Improved multipath performance
- **Enhanced Signal Flexibility**
- **GPS III Space Vehicle Platform**
 - Modular growth to full Capability Description Document (CDD) capabilities
 - Fully compliant with Government Mission Assurance requirements



Improves Mission Capabilities, Following Back to Basics Fundamentals

GPS III Development & Manufacturing



- **CDR completed Aug 2010 – 2 months early**
 - Culmination of 64 lower-level reviews
 - Manufacturing approved with no liens
- **1st Contractual Delivery per plan**
 - Bus Real Time Simulator (BRTS), 17 Sep 2010
- **Program transitioned to manufacturing phase**
 - 13 of 59 Manufacturing Readiness Reviews conducted, 41 total planned by year-end
 - 7 Engineering Development Units (EDUs) delivered, 22 total planned by year-end
- **LM Facilities Upgrades underway**
 - GPS Processing Facility structure nearing completion
 - GPS III Spherical Near Field Range certified 15 Sep
 - Passive Intermodulation Test Chamber set up for GPS III certification testing



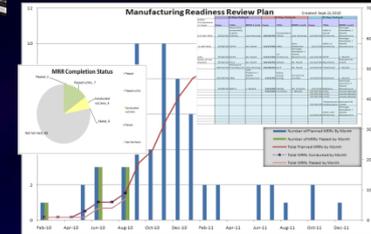
Space Vehicle
CDR
16-19 Aug



BRTS - Delivery
and Acceptance
Complete



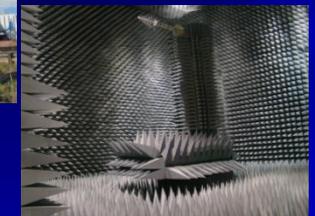
MRR
Execution
Plan



GPF Structure

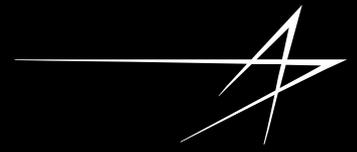


Spherical Near
Field Range



PIM Chamber

GPS III Capability Insertion



- **GPS IIIA**

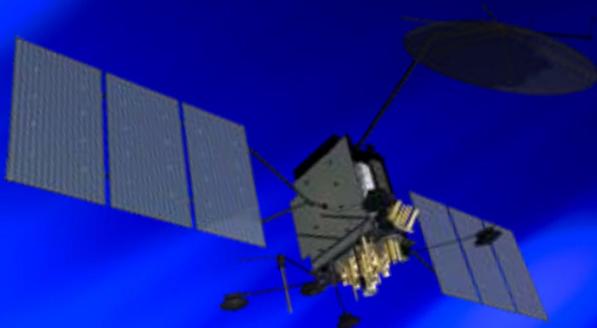
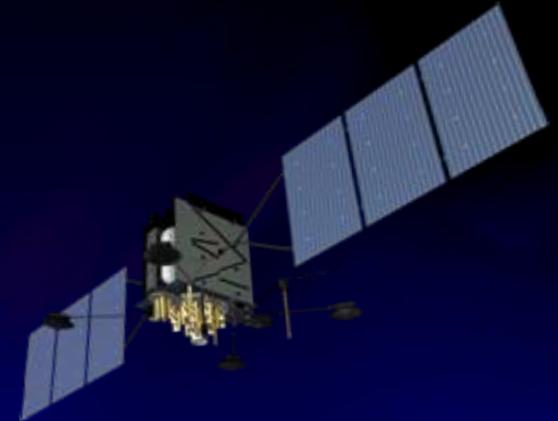
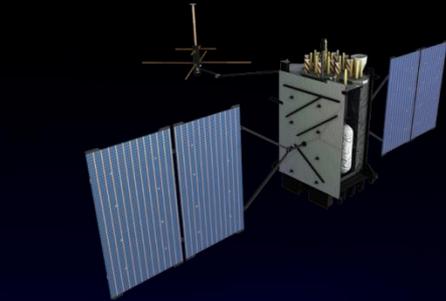
- Increased accuracy
- Increased Earth Coverage Power
- Additional civil signal (L1C)
- Bus capacity for IIIB and IIIC

- **GPS IIIB**

- Real-time command and control cross-links
 - Allows satellite uploads via single contact
 - Improves constellation accuracy

- **GPS IIIC**

- High-power spot beam
 - Provides increased anti-jamming capability for the military
- Improved integrity



Images Courtesy of USAF

Flexible, High Confidence Path to Future Capabilities

GPS III Way Ahead



- **Successfully transition from design to manufacturing**
 - Focus on production staffing, material deliveries
 - Build additional schedule margin
- **Proceed to GPS Non-flight Satellite Testbed (pathfinder vehicle) in 2011**
 - Deliver supporting Engineering Units
 - Drive out issues before flight unit builds
 - Complete and integrate Flight Software
- **Drive performance of key subsystems**
 - Meet schedules and execute predictably
 - Control costs across supply chain
- **Start production spacecraft long-lead procurement**
- **Support Analysis of Alternatives for future capabilities**

